



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/850,975	05/08/2001	Naoki Toyama	MAT-8130US	2941

7590 06/21/2004

RATNER AND PRESTIA  
Suite 301  
One Westlakes, Berwyn  
P.O. Box 980  
Valley Forge, PA 19482-0980

EXAMINER
----------

YENKE, BRIAN P

ART UNIT	PAPER NUMBER
----------	--------------

2614

DATE MAILED: 06/21/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/850,975

Applicant(s)

TOYAMA ET AL.

Examiner

BRIAN P. YENKE

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 (claims 4 and 10 being cancelled) is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-18 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7-9 and 11 is/are rejected.
- 7) ☒ Claim(s) 6 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Applicant's arguments filed 07 April 2004 have been fully considered but they are not persuasive.

#### ***Drawings***

2. The drawings are objected to because Figures 1 and 8 correspond with Prior Art Figures 8 and 16 respectively. The examiner is aware according to the specification that the difference between the operation of the drawings is the prior art utilizes a constant  $V_r$  whereas the applicant's invention is not constant. The examiner requests the applicant to clarify/modify Figures 1 and 8 to reflect a/the difference(s) between that and that of Prior Art (Figures 12 and 16 respectively). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

Art Unit: 2614

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claim 1 is objected to because of the following informalities:

Claim 1, line 9 states "...according to positional a relation...", the claim should state, "according to a positional [a] relation...".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-3, 5, 7-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriwake et al., US 6,201,581.

In considering claims 1 and 7,  
*a-b) the claimed a key signal generator for setting a key signal distribution formed by a first oval body surrounding a reference color of the screen in a three-dimensional color space and a second oval body surrounding the first oval body, and for generating a mixing key signal according to a positional relation among the source video signal, the*

*first oval body and the second oval body in the key signal distribution; and a mixing processor for taking out the foreground object component by the mixing key signal, and for mixing the object component with the background signal* is met by Moriwake which discloses an image synthesizing/editing device which sets a value of the key signal (key signal generating section 6, Fig 1) based upon the positional relationship/distance in 3D between background color inner sphere K1 (reference color) and the foreground color outer sphere K2 (Fig 26) (foreground picture), where the mixing is performed via the picture synthesizing section 7 (Fig 1).

*c) the claimed a signal generator...* is met by chrome key processing section 5 (Fig 1) which includes a key signal generating section 6 and a picture synthesizing section 7, where the coordinate transformation circuit 27 subtracts the color-difference signal levels of the center color (background) from that of the foreground picture (Fig 2).

*d) the claimed wherein said key signal generator* is where the generated key signals generated by key signal generation section 6 are mixed within picture synthesizing section 7 (Fig 12).

However, Moriwake does not disclose ovals. Moriwake discloses the use of spheres in analyzing the relationship between the background and foreground picture.

The selection of a sphere, oval or another geometric figure/shape in ascertaining the distance between the figures is a design choice, and thus not a patentably distinct feature.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Moriwake which discloses the use of a smaller sphere

K1, and a larger sphere K2 in ascertaining the distance between the video signal (the distance between the spheres, by utilizing other geometric figures/shapes such as a cube, since the selection is an arbitrary design choice.

In considering claims 2 and 8,

*a) the claimed a base clip level is a distance from the reference color to a cross point where the first body crosses with a vector starting from the reference color toward the source video signal is met by where the base clip level Fig 5b is the distance from the center of the reference color (C0, (Y0,U0,V0) to the starting point of ART (foreground picture).*

*b) the claimed a peak clip level is a distance from the reference color to a cross point where the second oval body crosses with a vector starting from the reference color toward the source video signal is met where the intersection of the background color and the foreground color (shown as the beginning point of the ramp (Fig 5b)) which extends to the end of the foreground picture (peak of ramp of Fig 5b).*

*c) the claimed the mixing key signal is a value responsive to a distance between the source video signal and the reference color, the value is saturated at the base clip level and the peak clip level with respect to the distance is met where the mixing key signal (key process 30, 35) for the Y and UV colors respectively is a value responsive to the base and peak clip level (Fig 2, Fig 5b).*

In considering claims 3 and 9,

*The claimed wherein the first and second oval bodies share a common center of the reference color of the screen and the first and second oval bodies are similar in shape is*

Art Unit: 2614

met where the reference color K1 and foreground color K2, share a common center as shown in Fig 26, where K1 and K2 are both spheres (similar in shape).

In considering claims 5 and 11,

*The claimed comprising a screen signal generator for generating a screen signal by using the source video signal and the screen reference color, the screen signal indicates a screen component included in the source video signal, wherein said mixing processor subtracts the screen component from the foreground object component by the screen signal, so that the foreground object component is mixed with the background video signal* is met chrome key processing section 5 (Fig 1) which includes a key signal generating section 6 and a picture synthesizing section 7, where the coordinate transformation circuit 27 subtracts the color-difference signal levels of the center color (background) from that of the foreground picture (Fig 2).

### ***Applicant's Arguments***

a) Applicant states that Moriwake does not disclose a way to obtain a mixed video signal such as in Fig 8 and formulas 13(a), 13(b) and 13(c). Applicant states that while Moriwake's formula 17 may look similar to applicant's formulas the second term in the right YOC, UOC and VOC are constant values. Applicant states that formula's 13 represent a source video signal  $V_s$  and  $X_y$ ,  $X_{cb}$  and  $X_{cr}$  represent a screen signal  $V_x$  which are changing base on the source video signal, and thus are not constant.

### ***Examiner's Response***

b) The examiner agrees with the applicant that YOC, UOC and VOC appear to be

constant values preset by the operator. However, the examiner is unaware of any claim limitation discriminating this feature, thus the examiner request the applicant to point out where in the claims this limitation appears. It is also noted by the examiner that formula 16 of Moriwake discloses that the UOC and VOC are subtracted from the color difference signal components U1, V1 of the input video signal, thus these numbers are not constant and do change with the input video signal. Therefore, the examiner would like the applicant to clarify formula 13 with respect to formula 16 of Moriwakes, in the event the distinguishing limitation (not a constant) is recited in the claims.

The examiner would also like the applicant to clarify with respect to the constant limitation as discussed above, with that of Delwiche, US 5,251,016 which discloses (col 1-25) that a hue selector detects the specific color of the set or backing on the presence or absence of this color in the foreground video signal. Where when the color is present, the foreground signal is suppressed, and a second background scene is substituted to present the illusion of the foreground object being in the same scene as the substituted background.

***Allowable Subject Matter***

5. Claims 13-18 are allowed.

Claims 6 and 12 (as indicated in the previous office action) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703)305-HELP.

General information about patents, trademarks, products and services offered by the United States Patent and Trademark Office (USPTO), and other related information is available by contacting the USPTO's General Information Services Division at:

800-PTO-9199 or 703-308-HELP

(FAX) 703-305-7786

(TDD) 703-305-7785

An automated message system is available 7 days a week, 24 hours a day providing informational responses to frequently asked questions and the ability to order certain documents. Customer service representatives are available to answer questions, send materials or connect customers with other offices of the USPTO from 8:30 a.m. - 8:00p.m. EST/EDT, Monday-Friday excluding federal holidays.

For other technical patent information needs, the Patent Assistance Center can be reached through customer service representatives at the above numbers, Monday through Friday (except federal holidays) from 8:30 a.m. to 5:00 p.m. EST/EDT.

General information brochures can also be obtained in person from the Patent Search Room located in Crystal Plaza 3, Room 1A03, 2021 South Clark Place, Arlington, VA 22202.

The Patent Electronic Business Center (EBC) allows USPTO customers to retrieve data, check the status of pending actions, and submit information and applications. The tools currently available in the Patent EBC are Patent Application Information Retrieval (PAIR) and the Electronic Filing System (EFS). PAIR (<http://pair.uspto.gov>) provides customers direct secure access to their own patent application status information, as well as to general patent information

Art Unit: 2614

publicly available. EFS allows customers to electronically file patent application documents securely via the Internet. EFS is a system for submitting new utility patent applications and pre-grant publication submissions in electronic publication-ready form. EFS includes software to help customers prepare submissions in extensible Markup Language (XML) format and to assemble the various parts of the application as an electronic submission package. EFS also allows the submission of Computer Readable Format (CRF) sequence listings for pending biotechnology patent applications, which were filed in paper form.



B.P.Y

15 June 2004



BRIAN P. YENKE

Primary Examiner

Art Unit 2614